

The Concept of Organizational Control

Arnold S. Tannenbaum

One of the advantages of programmatic research is the ability to pursue important problems through a series of related projects. The results of one study, and particularly the questions which it raises, contribute to the formulation of further research through which greater refinement and understanding can be achieved. This process has been applied by the Human Relations Program to a number of problems. We shall be concerned with the programmatic exploration of the concept of organizational control.

The importance of the control function stems both from its universality and its many implications for the way in which organizations behave. The widespread interest in "authoritarian-democratic" leadership, "centralization-decentralization," "flat" and "tall" organizational structures, "close" versus "general" supervision, and "joint management" reflects an interest in the effects of variation in patterns of control.

Several assumptions underlie our interest in control. The orderliness and predictability of organizational functioning is predicated on the regulation of individual behavior in conformance with organizational purposes. Control also has a number of psychological bases and implications. For example, numerous assumptions are made about the motivation toward power in organizations and many examples have been cited in support of the view that the lust for power is a primary and implacable drive.¹ While there may be some validity to this view, we cannot ignore the essentially pragmatic implications of control. Control for many is basically an instrumentality toward the achievement of rewards dispensed by the organization. These rewards fall into two categories: (a) rewards which accrue to, or simply parallel positions of control (for example, in many organizations positions of increased control are accompanied by increased prestige and remuneration); and (b) rewards which result through the exercise of control as a means toward some other end (for example, persons in control are able to influence the organization in a direction favorable to themselves or to some broader cause which they avow). The former is a fixed attribute of the role, likely to be more prominent in bureaucratic types of organizations. The latter is a variable function of the role, depending to a great degree on how the actor plays it. It is illustrated in some labor unions and political associations.

¹ See, for example, Bertrand Russell, *Power: A New Social Analysis*, London: George Allen and Unwin Ltd., 1946.

Finally, our interest in control reflects the assumption that in many formal organizations an individual's role in the control structure is a pervasive aspect of his larger role within the organization: a significant segment of his activities is subject to control or is concerned with the exercise of control. In so far as this is true, the nature of the control structure should have important implications for the adjustment of individuals to their work and for other aspects of the functioning of the organization.

Research on the question of organizational control within the Human Relations Program has addressed itself to two related questions: "How can we best describe and conceptualize the structure of control in organizations?" and "What are the implications of varying patterns of control?" It is primarily with the former that we shall be concerned in the present paper.

Approaches to the study of control in this program have developed through a number of stages. The first, which derived out of an interest in supervisory practices, suggested some implications for subordinate behaviors of the control exercised by the supervisor. The second went beyond the dyadic, supervisor-subordinate relationship in recognizing some of the uniquely organizational qualities of the control function. It proposed as one important index of organizational control the relative influence which the rank and file exercise as compared to that exercised by supervisors and upper hierarchical levels. The third extended this conceptualization to account explicitly for two aspects of organizational control: its hierarchical distribution and its total amount in the organization. The fourth added the notion of the hierarchical sociometry of control: which hierarchical levels exercise how much control over which.

Early Studies ²

Early programmatic treatment of the control variable was largely in terms of the interpersonal relationship of the supervisor and his subordinate. A number of relevant aspects of the supervisor's role were examined, including the amount of time he spent directing and planning the work as contrasted to the time spent simply working along with the men, the pressure which he applied to his subordinates, the extent to which his direction of the men was close and specific rather than general, and his satisfaction with his authority. Analysis of these qualities for supervisors of high as compared to low producing work groups produced a number of interesting differences. As the previous article has pointed out, the "effective" supervisor was found to differentiate his role as a leader from his role as a work group member; he spent his time regulating, plan-

²Daniel Katz, Nathan Maccoby, and Nancy C. Morse, *Productivity, Supervision and Morale in an Office Situation*, Part I. Survey Research Center, University of Michigan, 1950. Daniel Katz, Nathan Maccoby, Gerald Gurin, and Lucretia G. Floor, *Productivity, Supervision and Morale Among Railroad Workers*. Survey Research Center, University of Michigan, 1951.

ning, and coordinating the activities of his men rather than participating in the operation of the work group. He was found, in other words, to perform a distinct control function. Furthermore, the effective supervisor was found to be more satisfied with the amount of authority he had in his job—apparently because he had more.

In addition to these facts, the effective supervisor was found *in some cases* to exercise his control in a different manner than the ineffective supervisor. He did not pressure his men; he was not punitive; and his control was general rather than “close” or specific.

These early studies were largely an attempt to apply psychological conceptions to an organizational setting. Since the focus was primarily on supervisory practices, they did not attempt initially to define the control process in organizational terms nor to integrate this process with the larger pattern of events within the organization. Furthermore, they emphasized one side of the supervisor-subordinate relationship: the way in which the supervisor exercised control over the subordinate. It soon became apparent, however, that the supervisory role ought to be viewed in the context of its larger organizational setting. For example, whether or not the supervisor pressures his subordinates seems to be affected by whether or not the supervisor himself is subjected to pressure from his own superiors. Further analyses also demonstrated the importance of the supervisor's power in his department. The supervisor's influence over higher management, as well as his autonomy in running his work group, act to condition the effects of supervisory practices on subordinate reactions. For example, an expression of praise from a low-influence supervisor may be ignored or even resented by his subordinates, whereas the same expression from a high-influence supervisor would produce a highly favorable response.³

These early studies led to the general conclusion that an understanding of the control exercised by supervisors requires a broad view of the supervisory role, a role which is embedded in the larger context of the organizational control system. The supervisor has authority only to the degree that authority is delegated to him from above. The pattern of control exercised by the supervisor, or any hierarchical group, is part of a larger system of delegations, and it is this larger system of control which was considered the essential variable in the clerical experiment.

The Clerical Experiment⁴

Three aspects of the control process were considered in defining the control variable in this experiment: the legislative phase, which is con-

³ Donald C. Pelz, “Leadership within a Hierarchical Organization.” *Journal of Social Issues*, 1951, 7, No. 3, 49-55.

⁴ Nancy C. Morse, Everett Reimer, and Arnold S. Tannenbaum, “Regulation and Control in Hierarchical Organizations.” *Journal of Social Issues*, 1951, 7, No. 3, 41-48. Nancy C. Morse and Everett Reimer, “The Experimental Change of a Major Organizational Variable.” *Journal of Abnormal and Social Psychology*, 1956, 52, 120-129.

cerned with basic decision making; the administrative phase, which is concerned with the day to day expediting of legislative decisions; and the sanctions phase, which involves the punishment of non-conformity. Furthermore, these phases of control were conceived as being exercised relative to a number of "systems" or functional units (such as the work assignment system, work measurement system, the vacation system, the promotion system, etc.) which comprise the structure of the organization. Thus the independent variable was concerned with control (legislative, administrative, and sanctions) of the various company systems. It was measured through judgments of employees in terms of both *degree* and *location*: how much control resided with the rank and file, and how much resided with company personnel above the rank and file level. The ratio of control exercised by upper levels relative to that exercised by the rank and file group was chosen as the operational index of the independent variable. The experimental design involved the creation of two large work programs (in a clerical department) which differed on this independent variable.

The definition of the independent variable was such as to require changes not only at the rank and file level, but through an extended segment of the company hierarchy. In one program, the lower level employees were given a greater degree of control over many of the things which affected them. This was achieved through a series of delegations of control from the department head through the division managers, section heads, first line supervisors to the employees as a group. In the other program there was a greater concentration of control at upper hierarchical levels. The programs were thus made to differ in their ratios of "hierarchical" to rank and file control.

This study affected the study of control in a number of ways: Control was defined as an organizational rather than a purely interpersonal process. Groups rather than individuals were defined as the possible control agents. Control was conceived as being oriented not simply over individual action but over broad company systems. Furthermore, any specific act of control was seen as part of a larger pattern of control within the organization. The control exercised by one group was to be understood in relation to that exercised by others, and the ratio of rank and file control relative to control exercised by all other hierarchical levels was considered an important organizational index.

The experiment also raised a number of questions regarding the conceptualization of control. While the importance of the hierarchical distribution of control was recognized and measures of the control exercised by the various hierarchical levels were obtained, an adequate representation of this hierarchical pattern was not provided. The ratio of employee to officer control which served as the operational index of the independent variable considers only two elements in the hierarchy: the rank and file as a group and all those above the rank and file as a group, thus obscuring the distribution of control within the hierarchy. Further-

more, the ratio gives no indication of variations in absolute amount of control. It is not affected by proportional changes in the amount of both the rank and file and officer control.

The development of the control concept employed in a study of four local unions benefited directly from the notions provided in the clerical experiment. It represents an attempt to reconcile some of the operational advantages suggested by the experiment with some of the more common characterizations of control in unions.

The Union Study⁵

The terms "democratic" and "autocratic" have probably been applied more frequently to unions than to any other type of social organization. Such concepts, of course, have many weaknesses: they form a typology (class theoretical), they are often valuational, and they rarely have operational referents. Their wide use, however, does have at least two important implications. It recognizes the general importance of the control process, and it represents an attempt to characterize the *total* organization. The union study extended some of the notions of the clerical experiment in an attempt to encompass what appear to be the essential elements of these commonly used concepts, and to provide a more holistic description of organizational control.

In the union study, organizational control structure was described in terms of two axes of a graph. The horizontal axis of this graph represents the various hierarchical levels in the organization, from low to high. In the local unions, for example, the rank and file were placed at the low end of this axis and the president was placed at the high end. Other officer groups (the executive board and the bargaining committee) were placed at intermediate levels. The vertical axis represents the amount of control which is exercised by each of these hierarchical levels. Thus each level can be represented in terms of the amount of control it exercises over the affairs of the local. Various shapes of curve might be generated from these axes depending on the amount of control which each level has.

In the locals under study such curves were drawn on the basis of ratings which a representative sample of members gave in response to questions dealing with the amount of control which each hierarchical group exercised over the affairs of the local. Application of the control graph notion in the four local unions, and subsequently in a large industrial service organization has revealed a variety of curve shapes, including curves which rise with hierarchical ascent (said to describe the "oligarchic" or "autocratic" model), curves which decline with hierarchical ascent (said to describe the "democratic" model), and those

⁵ Arnold S. Tannenbaum and Robert L. Kahn, "Organizational Control Structure: A General Descriptive Technique As Applied to Four Local Unions." *Human Relations* (in press). Arnold S. Tannenbaum, "Control Structure and Union Functions," *American Journal of Sociology*, 61, 536-545.

which remain fairly flat.⁶ Furthermore, the decentralization which characterizes the specific industrial plants studied was represented by a rise in the curve until the top of the hierarchy (located in the central office) was reached, at which point the curve declined.

Two aspects of organizational control structure are evident from the control curves: (a) the hierarchical distribution of control, represented by the shape of the curve, and (b) the total amount of control instituted in the organization, represented by the general height of the curve. The fact that these dimensions may vary independently emphasizes the importance of distinguishing them. Organizations, for example, might have the same general distribution of control, while the amount of control exercised within them differs sharply. On the other hand, organizations might be equal in the amount of control exercised over members, but might differ markedly in the way the control is distributed. Such variations have been found among the organizations to which the control graph has been applied.

The Industrial Service Organization Study ⁷

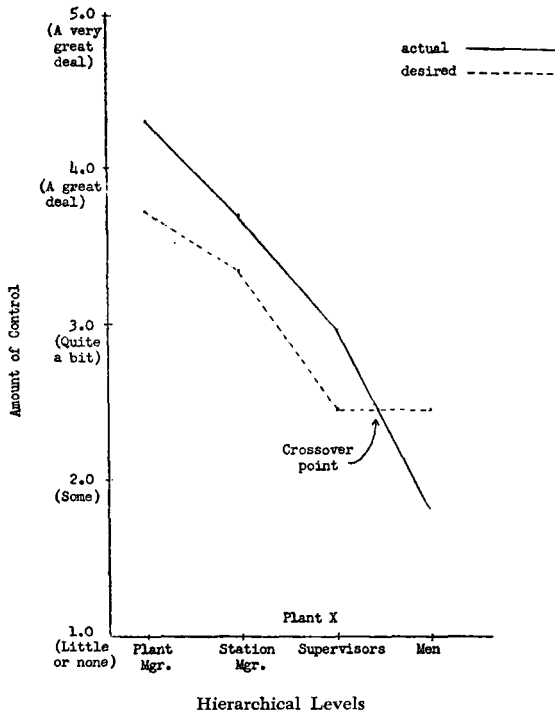
A further innovation in the control graph technique which has been applied in the study of industrial plants illustrates one of the versatilities of this approach. In addition to obtaining a picture of the control structure as perceived by the employees, measures were designed to ascertain the control structure as the employees would like it to be. The superimposition of curves representing the "actual" and the "desired" distributions of control provides an interesting comparison.

Figure 1 represents two plants in which employee perceptions of things as they are yield very similar control curves. When these curves are interpreted in the context of the control structure which the employees *desire*, some important differences emerge. While employees of both plants desire a less negatively sloped curve, the employees in Plant X would achieve this by lowering the power which each supervisory level exercises in the plant. They would increase only their own control. In Plant Y, however, while the rank and file are desirous of increasing their own influence in the running of the plant, they would not do so at the expense of the first line supervisor or the station managers—quite the contrary. Another indication of these differences is the fact that in Plant X the "desired" curve intersects the "actual" at a point between the men and first line supervisor; in Plant Y the point of intersection occurs between the station and plant managers. We have called this point

⁶ The flat curve might be relatively low or high on the vertical axis. The former, indicating relatively little control by any hierarchical level, is said to describe the "laissez faire" or "anarchic" model. The latter, indicating a high level of control by *all* hierarchical levels, is said to refer to the "polyarchic" model. See Tannenbaum, *op. cit.*

⁷ Arnold S. Tannenbaum and Basil S. Georgopoulos, "The Distribution of Control in Formal Organizations." Survey Research Center, 1956. (mimeo)

FIGURE 1
Actual and Desired Control *



*Judged by the rank and file employees

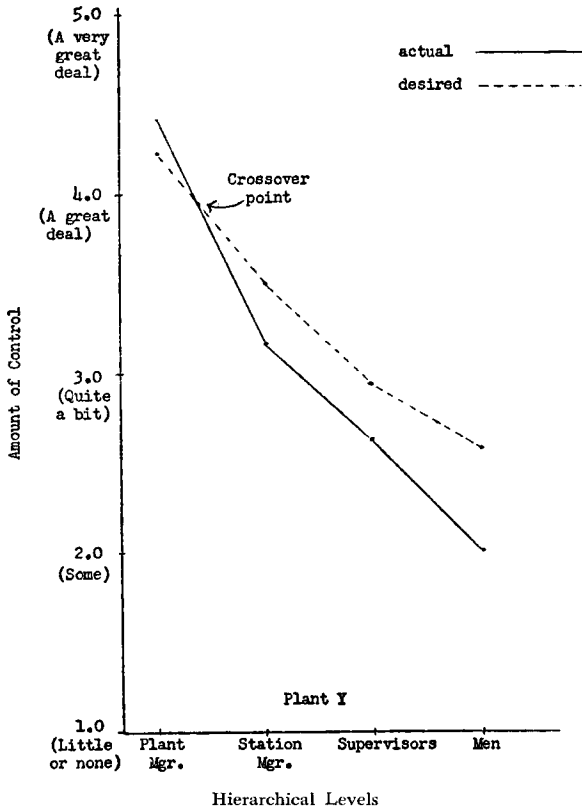
(Figure 1 continued on next page)

of intersection the “crossover” point and hypothesize it to be an important index of organizational control.⁸

While the control graphs provide a uniquely organizational description of the broad pattern of control, the curves depicted above ignore an important aspect of the control process— its directionality. Control has a point of origin, and an orientation or direction. Control involves the regulation or manipulation of something. Any act of control thus has both an active and passive phase; someone (or some group) *controls*, and something (or someone) *is controlled*. This distinction becomes particularly important when the immediate object of control is human

⁸ It is of further interest to note that Plant Y is functioning at a higher level of efficiency and worker satisfaction than X, although we cannot assert on the basis of this comparison that such differences are causally related to the differences in the actual and desired control patterns.

FIGURE 1 (continued)



action. The study of a large industrial service organization extended the application of the control graph notion to include this aspect of the control process in organizations.

The vertical axis of the control graph, representing the amount of control exercised by the various hierarchical levels, can be adapted to represent control in the passive sense—the extent to which each of the hierarchical groups is subject to control within the organization. A curve describing the distribution of “passive” control can then be drawn and superimposed on the active control curve. Together, these curves provide a significant index of organizational control, the extent to which each hierarchical level exercises control as compared to the extent to which it is controlled. Such curves were obtained for the industrial plants by asking the first and second line supervisors to rate the degree of control which each hierarchical level exercises over each, including its own. While the active control curves in these plants were found to be nega-

tively sloped, indicating greater influence by upper levels, the passive control curves were found to be positively sloped, indicating that lower levels are subject to more control than upper levels. This pattern of active-passive control is no doubt typical of industrial organizations, but one can conceive of variations from this pattern. For example, in the voluntary organization one is likely to find increases in passive control corresponding to increases in active control.

The industrial study attempted to answer a number of additional questions concerning the hierarchical sociometry of control: Over whom does any given level orient the control which it exercises? For example, how much control does the first line supervisor exercise over the rank and file employees, over the station manager, over the plant manager? Who exercises the control to which a specific level is subject? How much of the control, to which the rank and file is subject, comes from first line supervision, from the station manager, and from the plant manager? Such questions refer to what we have called the *orientation* and *sources* of control. The former indicates the direction or target toward which given levels orient their control; the latter indicates the sources from which control over any given level emanates. Figure 2 illustrates the way in which these patterns of control are described through the control graph. It represents the orientations of control for three hierarchical levels: higher management (which is physically distant from the plant), the plant manager, and the first line supervisors. In all cases the data are based on the judgments of first and second line supervisors.

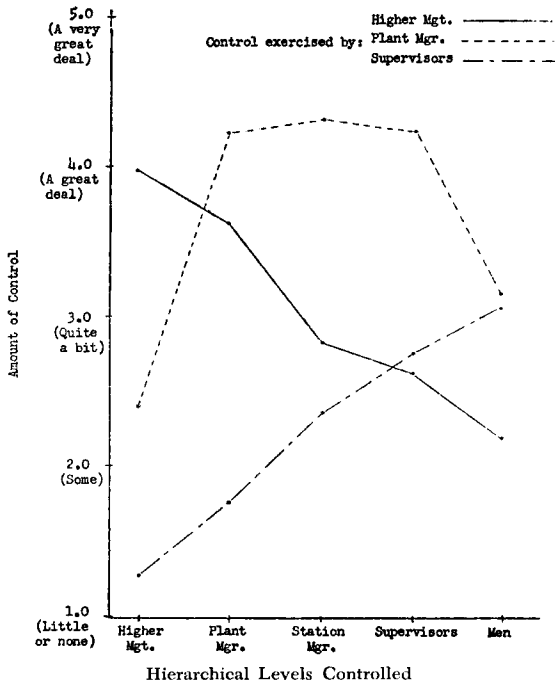
These curves convey information concerning the patterns of control exercised by higher management, the plant manager, and the first line supervisor. For example, the plant manager exercises a great deal of control over a fairly broad array of hierarchical groups, including the station managers, the first line supervisors, as well as himself. He also exercises quite a bit of control over the rank and file men and some control over higher management. Higher management exercises a great deal of control over its own actions and correspondingly less control over lower hierarchical groups within this plant. In contrast, the first line supervisors exercise more control over lower than over higher levels.

Summary and Conclusions

The series of studies described above has been concerned in part with the development of a more adequate conceptualization of organizational control. This series has moved from the study of specific supervisor-subordinate relationships to the development of a general schema describing the broader pattern of control in the organization. An attempt has been made in these studies to discover the uniquely organizational dimensions of control. The control graph elucidates a number of such dimensions:

1. The *distribution of control*, which is seen from the shape of curve. A number of indices are evident from the shape of curve, including the

FIGURE 2
**Orientations of Control for Higher Management,
 Plant Manager and Supervisors ***



• Adapted partly from Tannenbaum, Georgopoulos, *op. cit.* For simplicity, the curves for station managers and the rank and file are not shown. These data are based on judgments of supervisors and station managers.

general slope and the *acceleration* of the curve. The general slope indicates which levels ordinarily have the greatest power. Curve accelerations reflect the relative increments of control which occur from one hierarchical level to the next. For example, positive acceleration (in a negatively sloped curve) means that major control increments occur at upper hierarchical levels, while negative acceleration means that major increments occur at lower levels. The curves, of course, may be more complicated, having accelerations which change signs at varying points.

2. The *total amount of control*, which is seen from the average height of the curve.

3. *Discrepancies between the "active" and "passive" control*, which indicate the extent to which the various hierarchical levels exercise control as compared to the extent to which they are subject to control within the organization. The point where the active and passive curves intersect

(assuming one intersection) represents the place in the hierarchy where these functions reverse.

4. The *orientation span of control*, which indicates whether a given hierarchical level exercises control over a wide or narrow array of hierarchical groups.

5. The *sources span of control*, which indicates whether a given hierarchical level is controlled by a wide or narrow array of hierarchical groups.